# MODULE 3 DEVELOPMENT AND PRODUCTION OF LEARNING MATERIALS



## UNIT 1 ANALYSIS PHASE

## CONTENTS



## 1.0 INTRODUCTION

In this unit, you shall be considering the analysis phase of the design and production of instructional materials. The analysis of the characteristics of the learners such as the age, interest, ethnicity, achievement level, socio –economic, background, etc can be used to develop criteria, psychological conditions and principles for instructional materials. The knowledge of the learners' characteristics will be valuable in determining the appropriateness of the vocabulary, practice activities, details contained in the materials etc. An account description of the learners for whom the materials are intended will facilitate the work of the teacher.

If the teacher wants the learners to use instructional materials independently then the instructional strategies should be well developed and proper guidance or instructions should be included in the instructional materials. The instructional strategy provides a target with which to measure the appropriateness and standardisation of the materials

for the benefit of the present and subsequent utilisation. Lastly, you shall also be considering the conditions/circumstances of the stakeholders, beneficiaries, audience or users of the instructional materials.

## 2.0 OBJECTIVES

By the end of this unit, you should be able to:

- describe the problem you intend to solve through the design and production of your instructional materials
- explain the environmental context in which the instructional materials are designed, produced or utilised
- describe the conditions/circumstances of the stakeholders
- explain the philosophical basis for instructional materials

### HOW TO STUDY THIS UNIT

Read through this unit carefully. Study the unit step by step as the points are well arranged.

**NOTE: All Answers to Activities and Assignment are at the of end this Book.**

## 3.0 WORD STUDY

**Learning Environment:** This consists of the teacher, other learners and the instructional materials.

**Educational Stakeholders:** This includes the government, employers of the ministry of education, teachers/users and the students or pupils.

## 4.0 MAIN CONTENT

### 4.1 The Problem /Task Analysis

It is important to know exactly what you want to achieve when producing learning materials. Analysis involves a detailed examination of not only the learners but the instructional materials that the teacher intends to design and produce for the lesson or topic. You are going to learn about the analysis of learning tasks, identification and characterisation of learning tasks, learning environment and interactions such as the teacher, learners with learners and instructional media used in learning.

Analysis of the problem to be solved with the instructional materials is very crucial especially where it is estimated that up to 75% of a child's classroom time and as much as 90% of the homework time are spent using textbooks. If instructional

materials play this prominent role in learning, then it requires all the needed attention from all stakeholders, especially the teachers. You need to address questions as follows. What problems are you trying to solve? What specific instructional materials will solve the problems and how? You are to address the needs of the learners at this phase to determine what the students already know and what they need to know at the end of the lesson. This is why objectives should be well stated.

Furthermore, you need to analyse the task to be accomplished or specifically the content and skills to be acquired from the instruction. Task analysis can be carried out through:

- course content or texts
- curriculum / syllabus
- internet facilities which can provide workable template on line on many different courses
- needs analysis of the learners – the learners need to be treated based on their needs

The problem can be addressed once the task analysis, which is related to the content, is done. The knowledge of the actual learning tasks will help the teacher to know the exact learning activities to give to the learners. An example of getting the actual learning tasks will involve taking inventory of the learning tasks and subtract them from the input competence (that is, what the learner already knows e.g. previous knowledge / entry behaviour) and the actual learning tasks will be determined. It can be illustrated thus:

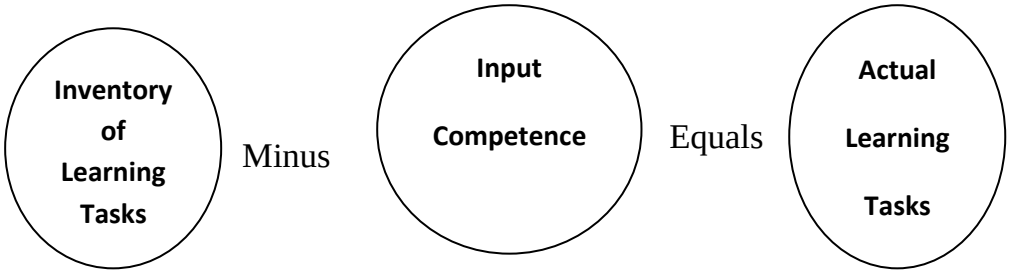


**Figure 1.1: Computing the Actual Learning Task (ALT)**

Also, learning is more meaningful and effective when the learner's input; competence and actual learning tasks meet the expectation of the inventory of learning tasks.

## 4.2 The Identification and Characterisation of Learning Tasks

You are already aware that a task analysis is necessary in order to maintain and determine standard skills or competencies in relation to the instructional content and objectives. Task analysis is done to know the needs of the learner and to establish what must be learnt. In addition to the foregoing, Gagne (1965) identifies a whole set of logical learning types that can further assist in the identification and acquisition of a particular learning task. These are:

- signal learning
- response learning
- motor and verbal chains
- multiple discrimination
- concept learning
- principle learning, and
- problem solving

The learning tasks directly or indirectly dictate the selection, organisation or production of learning content, learning experiences or activities. The information about these learning tasks is necessary for two purposes:

- to project the time needed to hurdle a learning task
- to guide in making an estimate of the amount of content needed for the treatment of any particular learning task.

**Strategies for analysing learning tasks**

You would have discovered from the foregoing, that analysis of learning tasks is what has to be learned as against what has been learned in order to achieve the stated instructional objectives. The following figure illustrates this further in a diagrammatical form.

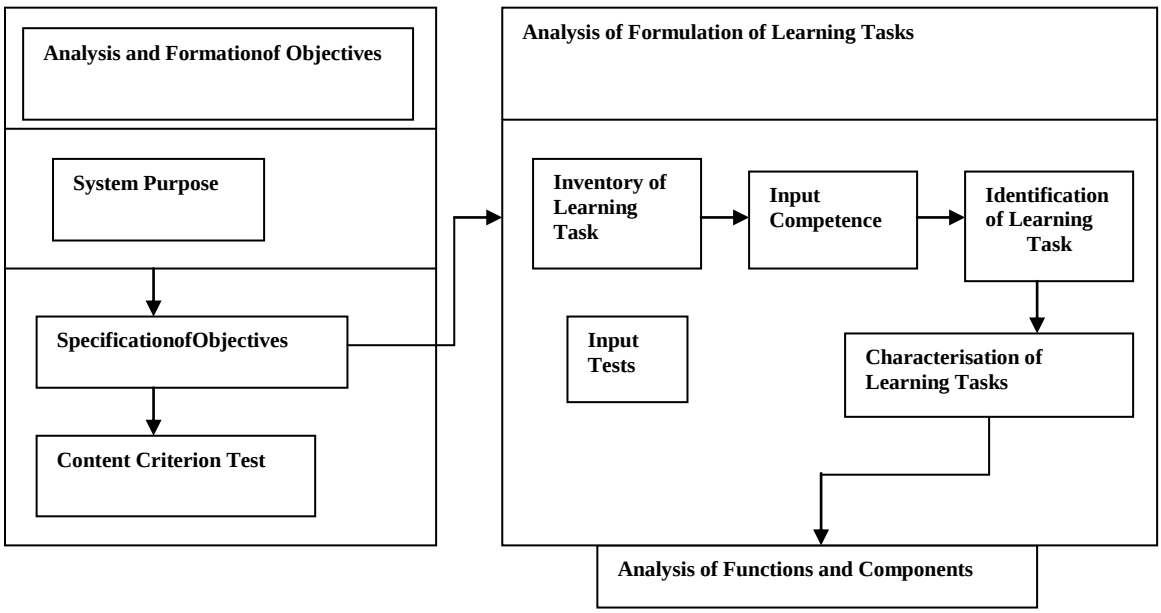


**Fig. 1.2: Strategies for Analysing Learning Tasks**

All learning tasks should be based on instructional objectives that are stated in such a way that they can be attained by both the teacher and learner at the end of the course or topic. Learning tasks should be so identified that at the end of the day, the learner actually is made to carry out one learning activity or another.

## 4.3 Learning Environment and Interactions

Every learner has to go through interactions with the learning environment which dictate and determine the quality of the learning experience. The learning environment and its interaction contribute immensely to the entry behaviour or previous knowledge of the learner. The learning environment provides opportunity for a solid and successful educational foundation for the learner.

According to Ouane (1989) there are three elements in the learning environment. They are:

- the teacher (facilitators)
- other learners
- materials and media for learning

He also listed three types of possible interaction that occur in the learning environment as follows.

i) Interaction with the teacher. The teacher plans the programme and directs it. This is referred to as "guided learning" where the direction is being determined mainly by the teacher.
ii) Interaction with other learners/colleagues. This type of interaction occurs among the participants or learners who learn from each other in a permissive atmosphere, this type of horizontal interactions result in "Inter-learning"
iii) Interaction with instructional materials and media. The learner interacts with certain media and materials such as textbooks, video, internet, radio etc. These may result in discovery, new learning or reinforced learning which may give rise to "self –learning" or "individualised learning".

The interactions should result in improved learner performance on the following tasks.

- Answering questions in reference to concrete phenomena immediately observable in the environment
- Asking questions about the same
- Describing a picture or object
- Describing his actions or the actions of those around him in his environment
- Repeating/rehearsing a short story he has just heard
- Engaging in a conversation about events in which he has been involved

**Learners' characteristics**
You must know your students very well in order to provide the best instructional materials for their use. As mentioned in the earlier module, you can best analyse your audience/learners in two ways. These are:

- general characteristics

- specific entry characteristics such as knowledge, skills, ability, attitudes etc.

According to Heinrich, Molenda and Russell (1982) the questions you need to ask yourself while analysing your students include the followings.

- Are your learners ready for the learning experience you wish to offer them?
- Is there a match between the learners' characteristics and your materials and methods?
- What are their individual differences/challenges and how can they be satisfied?
- How can the individual learner develop his general and specific characteristics through the materials and methods designed or chosen?

As already mentioned, the general characteristics are those characteristics of the learners that do not relate directly or have direct bearing on the content or subject matter. They include broad identifying descriptors such as age, gender, grade level, intellectual aptitude, cultural/ socio economic factors. On the other hand, the specific entry characteristics relate directly to the content or the subject matter and the decisions about media and methods. Examples are as follows.

Pre requisite skills –e.g. previous knowledge, entry behaviour
- Target skills – e.g. mastery of the skills
- Study skills – e.g. basic competencies in language, mathematics, reading etc.
- Attitudes – biases or misconceptions about the instructional materials.

## 4.4 Psychological Conditions and Principles for Instructional Materials Production

When you know the learners' characteristics, it will lead and help to know the psychological and principles you need to consider as you produce, design or utilise instructional materials. We shall now consider examples of these psychological conditions and principles under the following sub headings.

a. Individual differences. We already discover from the analysis of learners' characteristics that students vary in almost every area (even if they are twins) such as intellectual abilities, interests, socio–cultural backgrounds, personalities, maturity etc. As a result, you put into consideration their individual differences in order for them to benefit maximally from the teaching/learning process. Media are powerful means of taking care of the individual differences in learning.

b. Motivation. It has been established by research that instructional media stimulate and arouse the interest of the learners while sustaining their attention during the learning process. Students learn better or learning is more effective when the learners are motivated to learn. Thus, teachers should endeavour to make use of appropriate and interesting instructional materials lavishly.

c. Learning objectives. The achievement of the learning objectives is very important. The instructional materials should assist in the achievement of the objectives. It is easier to assess the achievement of the objectives if they are well stated in relation to every aspects of the learning process.
d. Organisation of content. There are some programmes that allow for logical or sequential structuring of learning such as programmed instruction, systems approach, logical sequencing etc. which the teacher can take advantage of in the production and design of instructional materials. Instructional materials can present information in terms of the complexity or difficulty of the subject matter.
e. Participation. Effective learning requires the active participation of the learners during the learning process. This can be done by using different instructional materials that will engage the learners in the learning.
f. Emotion. This relates to the affective domain of learning. Instructional materials by their nature can generate emotional responses such as love, fear, anxiety, excitement, empathy etc. You should bear this in mind and produce, design as select instructional materials that will satisfy the emotions of the learners so that they can learn more effectively.
g. Practice and repetition. Frequent practice, drills or repetition make information or learning permanent. They also reinforce and arouse the interest and sustain the attention of the learners.
h. Feedback. Feedback is also referred to as immediate knowledge of results. Feedback encourages the learners because it helps to know their progress. Programmed instruction is a good example of an instructional material that gives prompt and immediate knowledge of results.
i. Reinforcement .Reinforcement strengthens the interest and motivates the learner to want to learn more and helps a student to want to repeat his action that he is positively reinforced.
j. Transfer of learning. Successful learning will give the student the opportunity to transfer the knowledge gained from one subject to another if the need arises. The students, while acquiring specific knowledge in the subject matter, should be encouraged to make generalisations relating to the subject.

## 4.5 Analysis of Instructional Strategy

Instructional strategy is another design phase that requires analysis. Carey and Cary (1987) suggested some components of strategy to assess or analyse in relation to the design, production or selection of instructional materials. These are as follows.

a. The manner in which learners are motivated to study the materials
b. Whether learners are reminded of similar material they already know
c. Whether material is presented clearly with ample examples, rules and demonstrations
d. Whether relevant practice exercises are included
e. Whether students receive feedback on the quality of their performance on practice exercises

f. Whether feedback is presented in a manner that enables students to use the material to adjust their performance on sub-sequent practice activities.
g. Whether opportunities are provided for summaries and reviews at logical points throughout the materials and
h. Whether suggestions are provided for enrichment and remediation

Instructional materials that explicitly state the instructional strategy as shown above will be well implemented or utilised whether they are student or teacher managed.

## 4.6 Conditions and Circumstances of the Stakeholders, Beneficiaries, Audience or Users of Instructional Materials

The stakeholders such as the Ministry of Education, the pupils and even the teachers have a lot to benefit from the design, production or utilisation of instructional materials in the primary school. It can be summarised by using the following table which was adopted from UNESCO (2002).

**Table 1.1: Benefits of Instructional Materials to Stakeholders**

| S/N | Stakeholders | Benefit |
|---|---|---|
| 1 | Government | • To increase capacity and cost effectiveness of education and training system<br>• To reach target groups with limited access to conventional education training<br>• To support and enhance the quality and relevance of existing education structure<br>• To ensure the connection of educational institutions and curricular to emerging networks and information resources<br>• To promote innovations and opportunities for life long learning |
| 2 | Employers/Ministry of Education | • High quality, cost effective professional development in the work place<br>• Upgrading of employee skills, increased productivity<br>• Development of a new learning culture<br>• Sharing of costs and of training time with the employees Increased portability of training |
| 3 | Teachers/Users | • To upgrade standard of education and circular implementation<br>• To increase general effectiveness of teaching and learning processes<br>• To improve access to global opportunities on research and collaborative work<br>• To improve communication skills with learners<br>• To increase / prove access to scientific approach to the |

| | | |
|---|---|---|
| | | teaching industry |
| 4 | Students/Pupils | • Increased access<br>• Flexibility of content and delivery<br>• Learning centred approach<br>• High quality of education and preparation for higher education<br>• To introduce pupils to technological approach early |

## 5.0 Activity

1. What is task analysis and how do you analyze the needs of your learners.
2. What are the learner's characteristics?

## 6.0 Assignment

1. Identify/explain learning tasks as stated by Gagne (1965).

## 7.0 SUMMARY

In this unit, you have learnt the followings.

- We should deal with actual learning tasks of the learners.
- Taking inventory of learning tasks minus input competence equals actual learning tasks.
- The three elements in the learning environment are: the teacher, other learners and the instructional materials.
- The learning environment, when properly harnessed together, will result in good performance.

## 8.0 REFERENCES

Gagne, R. (1985). *The Conditions of Learning and the Theory of Instruction* (4thEdn). New York: Holt, Rinehart and Winston.

Heinich, R.O., Molenda, M.M.& Russell J.D. (1982). *Instructional Mediaand the New Technologies of Instruction*. New York: John Wiley & Sons.

Ouane, A. (1989). *Handbook on Learning Strategies for Post-Literacy and Continuing Education*. Hamburg: UNESCO Institute for Education

# UNIT 2 DESIGN PHASE: EDUCATIONAL OBJECTIVES RELEVANT TO THE DESIGN OF LEARNING MATERIALS

## CONTENTS



## 1.0 INTRODUCTION

In the previous unit, you considered the analysis phase of learning materials. In this unit, you will be moving towards the "design" phase. Simply put, design is a plan (which may depict drawings, diagrams, etc) that shows a step-by step way of carrying out this phase of instructional materials. This design phase includes the various aspects of designing learning materials such as selecting the topic/subject, developing the objectives, analysing the task(s), developing the assessment or evaluation mode and revising and modifying the whole procedure involved in this phase.

## 2.0 OBJECTIVES

By the end of this unit, you should be able to:

- select the topic/subject
- state the objectives
- analyse the task(s)
- develop the assessment/evaluation
- revise and modify the materials.

### HOW TO STUDY THIS UNIT

Read through this unit carefully. Study the unit step by step as the points are well arranged.

**NOTE: All Answers to Activities and Assignment are at the of end this Book.**

## 3.0 WORD STUDY

**Instructional Objective:** This refers to what the teacher intends to achieve after the instructional process.

**Behavioural Objectives**: This refers to the change in behaviour expected in the learner after the instructional process.

## 4.0 MAIN CONTENT

### 4.1 Selecting the Topic/Subject

How do you go about selecting the topic when designing? The pool of topics has expanded with technological innovations and with the development of new understanding regarding how these technological tools might help guide the learning and teaching processes. A topic or subject matter can be selected from the different areas such as the virtual library, the internet, websites, web quests and other traditional technological devices. The nature of the topic/subject can predetermine the kind of method, materials etc to adopt.

Table 2.1: A Procedure for Selection and Verification of InstructionalMaterials

| Phases | Purpose | Type of data | Sources of data |
|---|---|---|---|
| 1. Selection | Select materials that have the best potential for affecting learning outcomes desired by the educational agency | Intrinsic | Consideration from formative evaluation agency documentation expert opinions, proposed materials and publisher's documentation. |
| 2.Verification | Verify decisions made in phase 1 and make recommendations to teachers about how the materials can be used most effectively; i.e. as published with additions or with revisions | Pay off | Considerations about student performance, student attitude, teacher attitude, and implementation procedures. |

***Source: Carey& Carey (1987)***

The table above shows the procedure for the selection and verification of instructional materials which transcends the selection of content or topics for instruction.

## 4.2 Developing the Objectives

Objectives can be described as goals. They are statements targeting a particular area of a learning situation. Have you ever watched a football match before? How the teams are declared winners? A score is not declared until the football hits the target or goal. This happens in learning as well. A learner has not truly learnt until the objective, aim, goal or target is achieved resulting into a changed behaviour in the learner.

**There are two types of objectives:**

1. Instructional objective. This is what the teacher intends to have achieved after the instructional process.
2. Behavioural Objective. This is what change in behaviour is expected in the learner after the instructional process and it must be stated in observable, measurable or performance verbs such as mention, list, describe, identify, examine, write, clarify, evaluate, etc. Behavioural objectives should not be stated in immeasurable verbs, such as know or understand. Behavioural objective can be stated as follows.

"At the end of the lesson, the student should be able to mention eight out of the ten aims of education in Nigeria".

Taxonomies of educational objectives

The taxonomies of educational objectives are scientific classification of objectives into the following three domains of learning.

- Cognitive domain which deals with intellectual development.
- Affective domain which deals with the development of attitudes.
- Psychomotor domain which deals with the physical or motor skills development.

It is advisable to combine all the three domains in order to give a balanced instruction. Also, there are some suggested performance verbs or action words which you can use as you write your objectives. These words are referred to as "measurable verbs /observable verbs" which can help monitor the achievement of your objectives.

Here, below, are some words which demonstrate observable behaviours under the three domains of learning.

**Table 2.2: Cognitive Domain**

| Knowledge | Synthesis | Comprehension | Application | Evaluation | Analysis |
|---|---|---|---|---|---|
| Arrange | Arrange | Classify | Apply | Appraise | Analyse |
| Copy | Assemble | Convert | Assemble | Argue | Appraise |
| Define | Collect | Describe | Change | Assess | Calculate |
| Duplicate | Combine | Discuss | Choose | Attach | Categories |
| Label | Manage | Explain | Defend | Choose | Compare |
| List | Manipulate | Express | Demonstrate | Compare | Contrast |
| Match | Modify | Extend | Discover | Conclude | Criticise |
| memorise | Organise | Identify | Dramatise | Defend | Diagram |
| Nam | | Indicate | Draw | Judge | Differentiate |
| Order | | Outline | Employ | Justify | Distinguish |
| Quote | | Recognise | Extend | Predict | Examine |
| Recognise | | Relate | Illustrate | Rate | Experiment |
| Recall | | Report | Modify | Score | Explain |
| Record | | Respond | Operate | Select | Illustrate |
| Repeat | | Restate | Practice | Support | Question |
| Reproduce | | Review | Predict | Value | Test |
| Tell | | Rewrite | Prepare | | |
| Underlie | | Select | Produce | | |
| Compose | | Translate | Show | | |
| Create | | Originate | Solve | | |
| Design | | Plan | Use | | |
| Devise | | Prepare | Perform | | |
| Formulate | | Propose | Estimate | | |
| | | Set up | Evaluate | | |
| | | Write | | | |

***Instructional Design for Open Learning*, Training Manual used by COL to facilitate the first NOUN workshop held at Lokoja Confluence Motel in April 2000, pp. 38-40.**

**Table 2.3: Psychomotor Domain**

| | | | |
|---|---|---|---|
| Adapt | Duplicate | Move | Select |
| Adjust | Fix | Operate | Service |
| Assemble | Generate | Perform | Set up |
| Bend | Grasp | Pick up | Shorten |
| Build | Handle | Point to | Show |
| Calibrate | Hear | Practice | Slide |
| Close | Identify | Press | Sort |
| Combine | Illustrate | Pull | Stretch |
| Construct | Load | Push | Touch |
| Copy | Locate | Remove | Transport |
| Design | Loosen | Repair | Write |
| Diagram | Manipulate | Replace | |
| Disconnect | Measure | Restate | |
| Draw | Modify | Set | |

**Table 2.4: Affective Domain**

| | |
|---|---|
| Accept | Discuss |
| Attempt | Display |
| Ask | Dispute |
| Challenge | Follow |
| Change | Form |
| Commend | Initiate |
| Comply | Integrate |
| Conform | Join |
| Defend | Judge |
| Describe | |

**SELF-ASSESSMENT EXERCISE 2**

Underline the verb phrases which best demonstrate observable behaviours

**Table 2.5**

| | | |
|---|---|---|
| Know | State | Describe |
| Give examples of | Understand | Really know |
| Fully understand | Suggest reasons why | Explain |
| Evaluate | Be familiar with | Become acquainted with |
| Pick out | Distinguish between | Have a good grasp of |
| Appreciate | Analyse | Carry out |
| Summarise | Compare | Acquire a feeling for |
| Believe in | Learn the basics of | Realise the significance of |
| | Demonstrate | Show |
| | | Diagrammatically |

## 5.0 Activity

1. What are objectives? State the taxonomies of educational objectives.
2. How do you go about selecting the topic when designing?

## 6.0 Assignment

- State and explain the three domains of learning. How can they help you in the statements of objective?

## 7.0 SUMMARY

In this unit, you have learnt that statement of objectives is an important phase in the production process. Objectives are statements targeting a particular area of a learning situation. You are now conversant with two types of objectives. These are instructional objective which the teacher intends to have achieved after the instructional process and the behavioural objective which concerns the change in behaviour expected in the learner after the instructional process. This, of course, must

be stated in observable, measurable or performance verbs such as explain, list, describe, identify, examine, write, clarify, evaluate, etc. Behavioural objectives should not be stated in immeasurable verbs, such as know or understand. You will see that clear objective statement is a sine qua non to the designing and production of learning materials.

## 8.0 REFERENCES

Heinich, R.O., Molenda, M.M.& Russell J.D. (1982). *Instructional Media andthe New Technologies of Instruction*. New York: John Wiley & Sons.

*NOUN (2000).Instructional Design for Open Learning*. A training manual used by COL to facilitate the first NOUN workshop held at Lokoja Confluence Hotel in April 2000, pps. 38-40.

# UNIT 3 EVALUATING LEARNING MATERIALS

## CONTENTS



## 1.0 INTRODUCTION

Evaluation is an essential part of the design and production of learning materials. I want you to bear in mind that evaluation is supposed to run throughout the lesson. It is not only to be carried out at the end of the lesson. The notion that it is only the learners that should be evaluated should be corrected now. Evaluation should be performed at all stages of the lesson, and should be carried out on the learners' performance and achievement, the teachers' effectiveness, the achievement of the instructional goals and objectives, the instructional materials adopted and also the methods or strategy used.

## 2.0 OBJECTIVES

By the end of this unit, you should be able to:

- define evaluation and state its importance in the design and production of learning materials
- design evaluation instruments
- describe the strategies / types of evaluation.

### HOW TO STUDY THIS UNIT

Read through this unit carefully. Study the unit step by step as the points are well arranged.

**NOTE: All Answers to Activities and Assignment are at the of end this Book.**

## 3.0 WORD STUDY

**Evaluation:** This is an essential part of the design and production of learning materials. Evaluation should be performed at all stages of the lesson, and should be carried out on the learner's performance and achievement.

## 4.0 MAIN CONTENT

### 4.1 Evaluating Instructional Materials

The instructional material evaluation is dynamic in nature. It is aimed at ensuring that the set objectives are actualised. You should not use instructional materials just to fulfill all righteousness, but to adequately integrate them for specific instructional outcome. Evaluation of instructional materials produces great results in that it helps to establish standardisation of the materials. In other words, evaluation also covers the materials designed for the lesson specifically.

Evaluation is not the end of instruction. It is the beginning because at the beginning, evaluation can be used for introducing the lesson while gradually leading the learner into the main body of the lesson and then to the ultimate evaluation which must await the completion of the instructional unit. According to Heinich *et. al.* (2002), evaluation should be made before, during and after instruction.

**Model for evaluating instructional packages**
The Reiser and Dick Model (1990), states that the primary criterion to judge the effectiveness of a package is the extent to which students learn the skills the package is intended to teach. The twelve steps suggested by the model are listed below.

- Step 1 Identify package of interest
- Step 2 Identify general characteristics of package
- Step 3 Still interested in the package?
- Step 4 Identify or develop instructional objectives
- Step 5 Identify or develop test items and attitude questions
- Step 6 Conduct one-on-one evaluation
- Step 7 Is further evaluation necessary?
- Step 8 Need to Change test items?
- Step 9 Make changes to test items
- Step 10 Conduct small group evaluation
- Step 11 (Two weeks later): administer retention test
- Step 12 Write evaluation report

## 4.2 The Importance of Evaluation

Evaluation is important in the whole learning process and in the instructional materials employed to make the process more interactive and effective. Specifically, evaluation is important for the following reasons. It helps learners:

- recall what they have learnt in a particular section.
- monitor the learners' progress.
- identify any misunderstandings they may have about the content of a unit or a section of it.
- use what they learnt in a lesson to perform tasks that call for knowledge or the skills learnt.
- acquire greater self reliance as they are encouraged to become responsive and responsive to their studies.

It helps the teacher to:

- know the effectiveness of the materials used.
- assess the effectiveness of his teaching methods and to make necessary adjustments where necessary.
- assess the acceptability of the materials by the learners
- determine the standard of the materials used as compared to the accepted standard, especially if the material is improvised, adapted or adopted.

Evaluation of instructional materials is important for the following reasons.

- to determine the effectiveness of the materials
- to ascertain the acceptability by both the students and the teachers
- to determine the standardisation or global acceptability or otherwise of the instructional materials
- to ascertain the usability and maintenance requirements
- to determine the technical errors, difficulties or defects

## 4.3 Strategies and Types of Evaluations

Gronlund (1981) describes four purposes and four types of evaluations or assessments in education which can be applied to the evaluation of the design and production of instructional materials. These are as follows.

Table 3.1

| Types of evaluations | Purposes of evaluations |
|---|---|
| Placement evaluation | Evaluation of pupil entry performance in a sequence of instruction |
| Formative evaluation | Evaluation of pupil learning progress during instruction |
| Diagnostic evaluation | Evaluation of pupil learning difficulties during instruction |
| Summative evaluation | Evaluation of pupil achievement at the end of instruction |

The above explains the general purposes and procedures of evaluations. Let's now consider more specifically the evaluation of instructional materials.

**Questions for Review/Evaluation of Instructional Materials**

The following is an adapted summary of questions for review or evaluation of instructional materials using the formative evaluation mode.

Table 3.2

| Considerations from Formative Evaluation | General Questions |
|---|---|
| Philosophy | Is the educational philosophy of the school congruent with the philosophy and procedures in the materials? |
| Learners' characteristics | Are the learners' characteristics of the target population congruent with learners' accommodations in the materials? |
| Instructional goals | Are the instructional goals outlines by the Ministry of Education and stated in curriculum guidelines congruent with the scope and emphasis of goals in the materials? |
| Instructional objectives | Are objectives specified in curriculum guides and by subject matter experts compatible with those included in the materials? |
| Content | Is the content specified in the curriculum and by subject matter experts consistent with that in the materials? |
| Instructional strategy | Are research–based instructional strategies reflected in the instructional materials? |
| Utilisation | Are cost and format, as well as requirements for time, personnel, media, facilities and equipment acceptable? |
| Consistency within instructional materials | Is there internal consistency within the instructional materials e.g. are content and instructional strategies appropriate for the objectives; do tests measure achievement of the |

| | |
|---|---|
| | objectives, and are all components appropriate for the target population? |
| Developmental documentation | Are data included that provide evidence that the materials have been used successfully in a variety of instructional settings? |

**Criteria for Evaluating Instructional Materials**

The evaluation criteria by Hoepf-Wellenhofer (2009) are as follows:

a) Goal–centered criteria for evaluating instructional materials. This type of evaluation is targeted on the content of the instruction and the achievement of the objectives. Specific criteria in this area include congruence between content in packages and objectives, adequacy of content coverage and completeness, authority, accuracy, currency and objectivity (Olasunkanmi and Adisa, 2010).

b) Learner–centered criteria. The learner is the centre of all the instructional process. Therefore, the learner is considered with regards to the appropriateness of the instructional materials such as the interest, previous knowledge or experience, backgrounds, the simplicity or otherwise of the contents, details, vocabulary or language levels used and so on. The instructional materials must be able to address the specific needs of the learner in such a way that effective learning is guaranteed.

c) Learning-centered criteria. How adequate is the learning material in relation to the stated objectives? Is adaptation or improvisation necessary to add or subtract the details for the learning material to meet the standard required? The instructional materials can be evaluated to determine the adequacy based on the following factors.

- Pre-instructional packages
- Content sequencing and presentation
- Student participation and congruent practice exercise
- Feed back
- Assessments
- Follow–through directions for enhancing memory and transfer
- Delivery system and media formats and
- Learning guidance to move students from one component / activity to the next

These determining factors are inexhaustible but you can develop your own evaluating strategies to suit your own instructional procedures.

Context-centered criteria. These forms of evaluation relate to the authenticity of the instructional materials for content and learners, the feasibility of the materials for setting and budget. The following parameters should be considered when evaluating instructional materials based on context centered criteria:

- the technical quality of existing materials in relation to packaging
- graphic design and typography

- durability
- the audio and video quality
- interface design
- navigation
- functionality

## 5.0 Activity

1. Define evaluation and state the important in the design and production of learning material?
2. Explain Reiser and Dick model (1990) criteria for evaluating instructional material package.

## 6.0 Assignment

How will you carryout evaluation of the teacher and instructional material?

## 7.0 SUMMARY

In this unit, you are made aware of the fact that, evaluation is not the end of instruction. It is the beginning because at the beginning, evaluation can be used for introducing the lesson by giving your students .a pre-test, while gradually leading the learner into the main body of the lesson and then to the ultimate post-test evaluation which must await the completion of the instructional unit. According to Heinichet. al. (2002), evaluation should be made before, during and after instruction.

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# UNIT 4 THE LEARNING PACKAGE

## CONTENTS



## 1.0 INTRODUCTION

Considering what you have learnt so far regarding learning materials design, I believe you have come to the conclusion that the production of learning materials cannot be handled lightly. It is more a function of your skill, care, creativity and desire than that of available money. In this unit, you shall be introduced to some learning packages and you will also be considering the possibility of producing a print–based package using some guidelines.

## 2.0 OBJECTIVES

By the end of this unit, you should be able to:

- describe what a learning package is
- explain two examples of learning packages
- list some guidelines for producing an effective print- based learning package.

### HOW TO STUDY THIS UNIT

Read through this unit carefully. Study the unit step by step as the points are well arranged.

**NOTE: All Answers to Activities and Assignment are at the of end this Book.**

## 3.0 WORD STUDY

**Learning Package:** This refers to the specific programme for learning which has been specially designed for an identified audience.

## 4.0 MAIN CONTENT

### 4.1 Multimedia Learning Materials

For effective learning to take place, it may be necessary to employ at least three channels of human communication. These are eyes, ears and touch. Learning materials had already been classified and some rationale for their uses had been enumerated. However it will not be out of place to stress some of the advantages of learning materials again here.

Apart from the teacher telling you something in person, modern technology has given us alternative means of conveying and receiving information. There are hundreds of cassette tapes, both audio and video. There are also CDs, DVDs, IPods, mobile telephones, computers and the world-wide-web (www) of internet, etc. All these carry some well designed educational messages for us to choose from as teachers. On the part of the children, whether consciously or unconsciously, these various media impact on them, most times in a competitive way against our effort. Therefore, to develop and produce learning materials, you need to be able to design the lesson in a way that will ensure appeal and acceptance by your clients (the learners). It is popular these days to hear such phrase as ‘‘learning package’’. What is a learning package when discussing learning materials?

### 4.2 Learning Package

A learning package is a specific programme for learning which has been specially designed for an identified audience. The aim of a learning package is usually to promote or present a topic or subject or skill in a way intended to ensure its appeal or acceptance. Learning packages can be produced for learners at any educational level. However, it is mostly referred to when talking about distance learning.

A learning package can be a single mode– being basically print–based; it can also be electronically–based as is the case with e-learning. A learning package can also be multimedia where several media components are linked to stand alone or complement ideas within the design of the package. Learning packages can be produced on any topic or subject in the curriculum.

Learning packages are research based and require skill, care and creativity for an effective production. It is no wonder, that Strinivasan (2001), says that ‘contents, technology and service are the real and essential ingredients of a good learning package’. Referring to the production of e-learning, he says that the way in which the learning package is presented makes the developer/vendor stand out.

For this reason, most commercially produced learning packages are commissioned productions by experts.

## 4.3 Major Sources of Learning Packages

The National Open University of Nigeria and National Teachers' Institute are producers of learning packages on a variety of subjects or topics for students who are adults and are learning at a distance. Your course materials, with all the accompanying materials, are learning packages.

Other sources of learning packages are as follows.

- Educational consultancy companies
- Research institutes or council
- Donor educational agencies e.g. UNICEF and UNESCO
- Learning industries of various categories e.g. publishers and media houses.

The production of learning packages is by team work. The learning industries are able to work in partnership with their clients to provide high quality learning materials. Within the partnership, the clients act as the subject matter experts. From this, you can deduce that the production of learning packages is an expensive venture and may not be embarked upon by a single individual.

### 4.3.1 Case Study 1: Rocket French

Rocket French is a language learning package. It is developed and produced by ITS Directory. The company consists of a team of experts in French language and culture. There are also experts in various aspects of the media i.e. graphics artists cinematographer, graduates in the language etc.

Description: Rocket French is a comprehensive course programme on understanding the French language better and learning to speak it more fluently. It was designed and developed in 2007.

The package consists of 13 modules of 7 units. The duration of each unit is thirty minutes. Each unit contains:

- an interactive audio cassette tape
- an audio track on grammar and cultures
- transcript of the full conversation in the lesson both in English and French
- a dictionary of French words and phrases.

Cite:http://www:itsadirectory.com/156/rocket-french-learning-package

### 4.3.2 Case Study 2: Print Based Learning Package

Title: Training Manual– Course Material Development in Open and Distance Learning.

Description: It is a print –based material. It is comprehensive and consists of three modules of eleven units. It provides a step by step guide to writing course materials for open and distance learning.

Target Audience. Potential course material writers, academic staff of open and distance learning institution, potential editors.

Aim: To equip potential writers and editors with orientation of NOUN course writing style.

- To familiarise writers with course development strategies
- To provide reference materials for course materials development and writing

Delivery: Ten days workshop

Comment: The package followed the systematic approach of instructional materials development. It also adheres to the international standard guideline producing ‘‘print based materials’’ learning packages. The guideline was designed by the Commonwealth of Learning, Canada. It will be useful to you because you and your colleagues could decide to collaborate to design, develop and produce a learning package.

### 4.3.3 Print Based Materials Production Guidelines

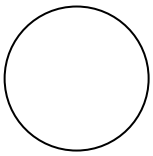
- Direct the learners on how to use the learning materials.
- Clearly state the objective.
- Cover all areas of knowledge in the syllabus.
- Follow a logical sequencing.
- Chunk material contents into manageable segments that can be completed in one session or lesson.
- Provide self evaluation questions and exercises. Provide sample answers.
- Provide assessment instrument.

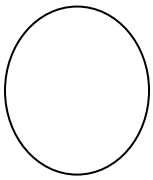
Take adequate precaution to avoid breaking copyright rules, regarding the contents in your materials

**The structure**
Ensure consistency in the structure of the material. That is, each unit should have:

- a list of contents
- an introduction
- the statement of objectives
- the main content
- conclusion
- summary
- tutor -marked assignment
- references/further reading

As much as possible, you may use illustrations to increase interest and draw attention. Use symbols /icons to give direction for self instruction format of a learning package. For example:

 = Read this

 = Activity

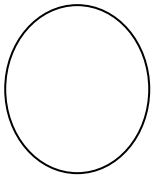
 = Take note

**Figure 4.1**

## 5.0 ACTIVITY

1. What is learning package? Why is learning packaged used in educational institutions?
2. Explain two examples of learning packages.

## 6.0 ASSIGNMENT

List some guidelines for producing based learning package.

## 7.0 SUMMARY

In this unit you have learnt that the learning package is the learning material that you can develop and produce in partnership with other experts.

Two leaning packages were described as examples. You were given a guideline for the effective production of print–based learning packages. In the next module you will be exploring an alternative measure to the production of costly learning materials.

## 8.0 REFERENCES

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